CLAIMS

What is claimed is:

33. (New) A vacuum pump comprising:

a drivable rotor having a blade in a housing which can be set in rotation, the rotor being comprising plastic and being formed as one piece, the rotor comprising a first longitudinal section configured for being coupled to a drive shaft via which a torque can be transmitted from a drive shaft to the rotor and that the first longitudinal section being formed as one piece with the rotor.

34. (New) A vacuum pump according to claim 33, wherein the rotor has at least one cavity open at the edge.

35. (New) A vacuum pump according to claim 34, wherein the cavity is introduced from a position consisting of the group consisting of the drive-side frontal side of the rotor and the frontal face of the rotor turned away from the drive.

36. (New) A vacuum pump according to claim 33, wherein the rotor comprises walls having a slight thickness.

37. (New) A vacuum pump according to claim 33, wherein the rotor comprises two wall areas and a transition between the two wall areas of the rotor having a different thickness, the which is continuous.

38. (New) A vacuum pump according to claim 33, wherein the rotor has a slot and at least one support having a diameter is smaller than the rotor diameter in the area of the slot in which the blade is displaceable.

39. (New) A vacuum pump according to claim 33, wherein the rotor has a diameter and a slot and wherein the rotor has at least one support whose diameter is the same size as the rotor diameter in the area of the slot in which the blade is displaceable.

40. (New) A vacuum pump according to claim 33, wherein the rotor has a slot and two supports and wherein a diameter of at least one of the supports is smaller than the rotor diameter in the area of the slot.

41. (New) A vacuum pump according to claim 33, wherein the rotor has at least two cavities disposed next to one another which are separated from one another by a rib.

42. (New) A vacuum pump according to claim 41, wherein the rotor has wall areas and wherein the rib is thinner than the rest of the wall areas of the rotor.

43. (New) A vacuum pump according to claim 33, further comprising a coupling formed by a disk and wherein the rotor can be energized with a torque via the coupling.

44. (New) A vacuum pump according to claim 43, wherein the disk has a thickness and a diameter, and wherein the ratio of the thickness (b) and the diameter (d) of the disk lies in a range of $0.1\,4 \leq b/d \leq 0.3$.

43. (New) A vacuum pump according to claim 33, wherein the rotor has a drive segment having a support length (l) and the rotor having a diameter and wherein the diameter (D) of the rotor lies in a range of $0.35 \leq l/D \leq 0.65$.

44. (New) A vacuum pump according to claim 33, further comprising at least two drive segments which are connected to one another by a closed ring.

45. (New) A vacuum pump according to claim 33, further comprising a coupling having a drive mechanism selected from the group consisting of a long hole in which a drive shaft engages and a drive tongue which engages in a corresponding slot in a drive shaft.

46. (New) A vacuum pump according to claim 45, wherein the drive tongue has a double surface formed by a first longitudinal section of the rotor which is provided with a vat-like cap preferably consisting of sheet metal.

47. (New) A vacuum pump according to claim 33, wherein the rotor has an elastic drive

element working together with a drive shaft.

48. (New) A vacuum pump according to claim 33, further comprising a drive element.

49. (New) A vacuum pump according to claim 48, wherein the drive element is spring steel.

50. (New) A vacuum pump according to claim 48, wherein drive element projects into a slot in a drive shaft and is displaceably guided in it.

51. (New) A vacuum pump according to claim 50, wherein the drive element engages in a slot-like recess in the rotor.

52. (New) A vacuum pump according to claim 48 wherein the drive element is held undisplaceably in the recess.

53. (New) A vacuum pump according 48, wherein the drive element is embedded in the rotor.

54. (New) A vacuum pump according to claim 48 of the preceding claims characterized by the fact that the drive element is formed in the shape of a U.

55. (New) A vacuum pump according claim 48, wherein the rotor comprises at least one stop surface during the energizing of the drive element with a torque.

56. (New) A vacuum pump according to claim 55, wherein the drive element is formed as a ball in a bearing area of the rotor.

57. (New) A vacuum pump according to claim 48, wherein the rotor has at least one stop for the drive element.

58. (New) A vacuum pump according to claim 48, wherein the drive element is angled off at an end engaging a recess in the rotor.

59. (New) A vacuum pump according to claim 33, wherein the rotor is disposed in communication with a motor.

60. (New) A vacuum pump according to claim 33, wherein the rotor has a first longitudinal section which can be coupled to a drive shaft via which a torque can be transmitted from the drive shaft to the rotor and that the first longitudinal section is formed as one piece with the rotor.

61. (New) A vacuum pump comprising:

a drivable rotor via which a blade in a housing can be set in rotation where the rotor consists of plastic and is formed as one piece,

a coupling having a bearing surface; and

an opposing surface disposed at the rotor for each bearing surface of the coupling where a torque transmitted from a drive shaft can be conducted into the rotor via the opposing surface.

62. (New) A vacuum pump according to claim 61, wherein the rotor has at least one cavity open at the edge.

63. (New) A vacuum pump according to claim 62, wherein the cavity is introduced from a position consisting of the group consisting of the drive-side frontal side of the rotor and the frontal face of the rotor turned away from the drive.

64. (New) A vacuum pump according to claim 61 characterized by the fact that the opposing surface is located on a drive segment projecting over the drive-side frontal surface of the rotor (1).

65. (New) A vacuum pump according to claim 61, wherein the rotor has walls having a slight thickness.

66. (New) A vacuum pump according to claim 61, wherein the rotor comprising two wall areas and a transition between the two wall areas of the rotor having a different thickness which

is continuous.

67. (New) A vacuum pump according to claim 61, wherein the rotor has a slot and at least one support having a diameter is smaller than the rotor diameter in the area of the slot in which the blade is displaceable.

68. (New) A vacuum pump according to claim 61, wherein the rotor has a diameter and a slot and wherein the rotor has at least one support whose diameter is the same size as the rotor diameter in the area of the slot in which the blade is displaceable.

69. (New) A vacuum pump according to claim 61, wherein the rotor has a slot and two supports and wherein a diameter of at least one of the supports is smaller than the rotor diameter in the area of the slot.

70. (New) A vacuum pump according to claim 61, wherein the rotor has at least two cavities disposed next to one another which are separated from one another by a rib.

71. (New) A vacuum pump according to claim 70, wherein the rotor has wall areas and wherein the rib is thinner than the rest of the wall areas of the rotor.

72. (New) A vacuum pump according to claim 61, further comprising a coupling formed by a disk and wherein the rotor can be energized with a torque via the coupling.

73. (New) A vacuum pump according to claim 72, wherein the disk has a thickness and a diameter, and wherein the ratio of the thickness (b) and the diameter (d) of the disk lies in a range of $0.1\,4 \leq b/d \leq 0.3$.

74. (New) A vacuum pump according to claim 61, wherein the rotor has a drive segment having a support length (l) and the rotor having a diameter and wherein the diameter (D) of the rotor lies in a range of $0.35 \leq l/D \leq 0.65$.

75. (New) A vacuum pump according to claim 61, further comprising at least two drive segments which are connected to one another by a closed ring.

76. (New) Vacuum pump according to claim 61, further comprising a coupling having a drive mechanism selected from the group consisting of a long hole in which the drive shaft engages and a drive tongue which engages in a corresponding slot in a drive shaft.

77. (New) A vacuum pump according to claim 76 wherein the drive tongue has a double surface formed by a first longitudinal section of the rotor which is provided with a vat-like cap preferably consisting of sheet metal.

78. (New) A vacuum pump according to claim 61, wherein the rotor has an elastic drive element working together with a drive shaft.

79. (New) A vacuum pump according to claim 61, further comprising a drive element.

80. (New) A vacuum pump according to claim 79, wherein drive element projects into a slot in a drive shaft and is displaceably guided in it.

81. (New) A vacuum pump according to claim 80, wherein the drive element engages in a slot-like recess in the rotor.

82. (New) A vacuum pump according to claim 79, wherein the drive element is held undisplaceably in the recess.

83. (New) A vacuum pump according 79, wherein the drive element is embedded in the rotor.

84. (New) A vacuum pump according to claim 79, wherein the drive element is formed in the shape of a U.

85. (New) A vacuum pump according claim 79, wherein the rotor comprises at least one stop surface during the energizing of the drive element with a torque.

86. (New) A vacuum pump according to claim 85, wherein the drive element is formed as a ball in a bearing area of the rotor.

87. (New) A vacuum pump according to claim 79, wherein the rotor has at least one stop for the drive element.

88. (New) A vacuum pump according to claim 79, wherein the drive element is angled off at an end engaging a recess in the rotor.

89. (New) Vacuum pump according to claim 61, wherein the rotor is disposed in communication with a motor.

90. (New) A vacuum pump according to claim 61, wherein the rotor has a first longitudinal section which can be coupled to a drive shaft via which a torque can be transmitted from the drive shaft to the rotor and that the first longitudinal section is formed as one piece with the rotor.

91. (New) A vacuum pump comprising:

a drivable rotor configured for rotating a blade in a housing, the rotor comprising plastic and being formed as one piece and wherein the rotor has at least two cavities which are each introduced from a frontal side of the rotor and that the rotor has at least one closed wall running transversely or essentially transversely to the central longitudinal axis of the rotor, said wall separating the cavities from one another in the axial direction.

92. (New) A vacuum pump according to claim 91 wherein the cavities extend in the axial direction into the central area of the rotor.

93. (New) A vacuum pump according to claim 91, wherein the rotor has walls having a slight thickness.

94. (New) A vacuum pump according to claim 91, wherein the rotor comprising two wall areas and a transition between the two wall areas of the rotor having a different thickness which is continuous.

95. (New) A vacuum pump according to claim 91, wherein the rotor has a slot and at least one support having a diameter is smaller than the rotor diameter in the area of the slot in which the blade is displaceable.

96. (New) A vacuum pump according to claim 91, wherein the rotor has a diameter and a slot and wherein the rotor has at least one support whose diameter is the same size as the rotor diameter in the area of the slot in which the blade is displaceable.

97. (New) A vacuum pump according to claim 91, wherein the rotor has a slot and two supports and wherein a diameter of at least one of the supports is smallerthan the rotor diameter in the area of the slot.

98. (New) A vacuum pump according to claim 91, wherein the rotor has at least two cavities

disposed next to one another which are separated from one another by a rib.

99. (New) A vacuum pump according to claim 98, wherein the rotor has wall areas and wherein the rib is thinner than the rest of the wall areas of the rotor.

100. (New) A vacuum pump according to claim 91, further comprising a coupling formed by a disk and wherein the rotor (1) can be energized with a torque via the coupling.

101. (New) A vacuum pump according to claim 100, wherein the disk has a thickness and a

diameter, and wherein the ratio of the thickness (b) and the diameter (d) of the disk lies in a range of $0.1\,4 \leq b/d \leq 0.3$.

102. (New) A Vacuum pump according to claim 91, wherein the rotor has a drive segment having a support length (l) and the rotor having a diameter and wherein the diameter (D) of the rotor lies in a range of $0.35 \leq l/D \leq 0.65$.

103. (New) A vacuum pump according to claim 91, further comprising at least two drive segments which are connected to one another by a closed ring.

104. (New) Vacuum pump according to claim 91, further comprising a coupling having a drive mechanism selected from the group consisting of a long hole in which the drive shaft engages and a drive tongue which engages in a corresponding slot in a drive shaft.

105. (New) A vacuum pump according to claim 104, wherein the drive tongue has a double

surface formed by a first longitudinal section of the rotor which is provided with a vat-like cap preferably consisting of sheet metal.

106. (New) A vacuum pump according to claim 91, wherein the rotor has an elastic drive element working together with a drive shaft.

107. (New) A vacuum pump according to claim 91, further comprising a drive element.

108. (New) A vacuum pump according to claim 107, wherein drive element projects into a slot in a drive shaft and is displaceably guided in it.

109. (New) A vacuum pump according to claim 108, wherein the drive element engages in a slot-like recess in the rotor.

110. (New) A vacuum pump according to claim 107, wherein the drive element is held undisplaceably in the recess.

111. (New) A vacuum pump according 107, wherein the drive element is embedded in the rotor.

112. (New) A vacuum pump according to claim 107, wherein the drive element is formed in the shape of a U.

113. (New) A vacuum pump according claim 107, wherein the rotor comprises at least one stop surface during the energizing of the drive element with a torque.

114. (New) A vacuum pump according to claim 114, wherein the drive element is formed as a ball in a bearing area of the rotor.

115. (New) A vacuum pump according to claim 107, wherein the rotor has at least one stop for the drive element.

116. (New) A vacuum pump according to claim 107, wherein the drive element is angled off at an end engaging a recess in the rotor.

117. (New) Vacuum pump according to claim 91, wherein the rotor is disposed in communication with a motor.

118. (New) A Vacuum pump according to claim 91, wherein the rotor has a first longitudinal section which can be coupled to a drive shaft via which a torque can be transmitted from the drive shaft to the rotor and that the first longitudinal section is formed as one piece with the rotor.

119. (New) A vacuum pump according to claim 91, wherein rotor has a opposing surface and further comprising a coupling having a bearing surface of a coupling where a torque transmitted from the drive shaft can be conducted into the rotor via the opposing surface.

120. (New) A vacuum pump according to claim 91, wherein the rotor has at least one cavity

open at the edge.

121. (New) A vacuum pump according to claim 120, wherein the cavity is introduced from a position selected from the frontal side of the rotor and from its frontal face (5) turned away from the drive.